REMARKS

The Office Action mailed July 3, 2007 has been carefully considered. Reconsideration in view of the following remarks is respectfully requested.

Claim Status and Amendment of the Claims

Claims 74-75, 77-80, 82-83, 85-88, 90-91, 93-96, 98-99, 101-104, and 106-113 are currently pending.

No claims stand allowed.

Claims 74-75, 77-80, 82-83, 85-88, 90-91, 93-96, 98-99, 101-104, and 106-109 have been amended to further particularly point out and distinctly claim subject matter regarded as the invention. Support for these changes may be found in the specification and figures as originally filed.

Claims 1-73, 76, 81, 84, 89, 92, 97, 100, and 105 were previously cancelled, without prejudice or disclaimer of the subject matter contained therein.

New claims 110-113 have been added. Support for these claims may be found in the specification and figures as originally filed.

The First 35 U.S.C. § 103 Rejection

Claims 74, 75, 79, 82, 83, 87, 90, 91, 95, 98, 99, and 103 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chen et al.[1] in view of Williams,[2] and further in view of Schrobenhauzer et al.[3] [4] This rejection is respectfully traversed.

[1] U.S. Patent No. 6,076,107 to Chen et al.
[2] U.S. Patent No. 6,151,630 to Williams.
[3] U.S. Patent Publication No. 2001/0047456 to Schrobenhauzer et al.
[4] Office Action mailed July 3, 2004, at ¶ 7.

According to the Manual of Patent Examining Procedure (M.P.E.P.),

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure.[5]

Claim 74

Claim 74 as presently amended recites:

> A method for predictively responding to a network management data request, the method comprising:
> receiving a first network management data request;
> determining if the first network management data request matches a pattern of request defined and stored in advance in a memory, the pattern including one or more expected management data requests;
> determining if data responsive to the first network management data request is contained in a cache of prefetched network management data if the first network management data request matches a pattern defined in the memory;
> sending a response including the data responsive to the first network management data request, if the data responsive to the first network management data request is contained in the cache and if the first network management data request matches a pattern defined in the memory; and
> collecting, if the first network management data request matches a pattern defined in the memory, data responsive to any remaining network management data requests in the matched pattern.

The Examiner states:

> ... Chen teaches a method of predictively responding to a network management data request, the method comprising: receiving a first network management data request (Chen, col. 6, lines 50-54); sending a response including the data responsive to the first network management data request, if the data responsive to the first network management data request is contained in the cache (Chen, col. 7, lines 1-7). Chen does not explicitly teach determining if a request contains a defined pattern. However, Williams teaches determining if the first data request matches a pattern of request defined in a memory (when a user first accesses server (i.e., server receives a request for a page from a new user)... processor initializes the allocated memory for variables associated with this session ...this

[5] M.P.E.P § 2143.

> involves making and loading a copy of records of all pages,..of all sequences that are stored in server into allocated memory. This copy and not the originals will be used by processor to service the user's page-access requests - see Williams, col. 4, line 11-29), the pattern including one or more expected data requests (the author of pages 107 define[s] a sequence of pages - see Williams, col. 3, lines 26-27); and determining if data responsive to the first data request (a user requests a page by specifying a URI-Receipt of such a request at server invokes... processor [to] check[s] whether a record that corresponds to the received URL exists - see Williams, col. 4, lines 34-39) is contained in a cache of prefetched data (loading a copy of records of all pages of all sequences that are stored in server into allocated memory. This copy and not the originals will be used by processor to service the user's page-access requests. Optionally, processor may also place the corresponding pages in a cache memory - see Williams, col. 4, lines 20-30) if the first data request matches a pattern defined in the memory (a user requests a page by specifying a URL...Receipt of such a request at server invokes... processor [to] check[s] whether a record- that corresponds to the received URL exists - see Williams, col. 4, lines 34-39); and collecting, if the first network management data request matches a pattern defined in the memory, data responsive to any remaining network data requests in the matched pattern (when a user first accesses server (i.e., server receives a request for a page from a new user)... processor initializes the allocated memory for variables associated with this session... this involves making and loading a copy of records of all pages ...of all sequences that are stored in server into allocated memory. This copy and not the originals will be used by processor to service the user's page-access requests - see Williams, col. 4, line 11-29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Chen in view of Williams in order to enable determining if a request contains a defined pattern. One would be motivated to do so in order to enable loading a copy of a set of data into a cache memory to service a user's requests. The combination of Chen and Williams does not explicitly teach a pattern of request defined and stored in advance in a memory. However, Schrobenhauzer teaches determining if the first data request matches a pattern of request defined and stored in advance in a memory (Schrobenhauzer, page 5, paragraph 112). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chen and Williams in view of Schrobenhauzer in order to enable a pattern of request defined and stored in advance in a memory. One would be motivated to do so in order to eliminate waiting time for the response.[6]

The Applicant respectfully disagrees. In support of the Examiner's statement regarding Claim 74's limitation of "determining if the first network management data request matches a pattern of request defined and stored in advance in a memory, the pattern including one or more expected management data requests," the Examiner refers to portions of Williams that speak generally

[6] Office Action dated July 3, 2007, ¶ 8.

about a server receiving a request for a Web page when a user begins a session with a server.[7] The Applicant respectfully submit the Examiner's attempt to equate a network management data request with a user's request for a Web page is improper. Williams does not teach determining if the first network management data request matches a pattern of requests ... where the pattern includes one or more expected management data requests as required by Claim 74, because the request of Williams is neither a *management* data request, nor an *expected* management data request (the request that has already been received cannot be considered to be "expected").

Additionally, the Examiner contends Schrobenhauzer et al. discloses a pattern of request defined and stored in advance in a memory. However, Schrobenhauzer et al. says nothing about a pattern of requests. In support of the Examiner's statement, the Examiner refers to the following portion of Schrobenhauzer et al.:

> [0112] Further, according to the processor 1, for example in the case where the CPU 10 performs processing for continuous data or the case where the CPU 10 requests data with a predetermined address pattern, by transferring the data required by the CPU 10 from the external memory 14 to the data buffer memory 15 in advance before receiving the request from the CPU 10, the waiting time of the CPU 10 can be almost completely eliminated.[8]

Thus, Schrobenhauzer et al. talks about an *address* pattern, not a pattern of requests. The Applicants respectfully submit the Examiner's attempt to equate an address pattern with a pattern of request ... including one or more expected management data requests as required by Claim 74, is improper. For this additional reason, the 35 U.S.C. § 103 Rejection of Claim 74 is unsupported by the cited art of record and must be withdrawn.

Claims 82 and 98

[7] *See* Williams at col. 4 ll. 11-29.
[8] Schrobenhauzer et al. at ¶ 112.

Claim 82 is a non-means-plus-function claim corresponding to method claim 74. Claim 98 is an *In re Beauregard* claim corresponding to method claim 74. Claim 74 being allowable, Claims 82 and 98 must also be allowable.

Claims 75, 79, 83, 87, 99, and 103

Claims 75 and 79 depend from Claim 74. Claims 83 and 87 depend from Claim 82. Claims 99 and 103 depend from Claim 98. Claims 74, 82, and 98 being allowable, Claims 75, 79, 83, 87, 99, and 103 must also be allowable.

The Second 35 U.S.C. § 103 Rejection

Claims 77, 78, 80, 85, 86, 88, 93, 94, 96, 101, 102, 104 and 106-109 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Chen et al. in view of Williams, further in view of Schrobenhauzer et al., and further in view of Case et al.[9] [10] This rejection is respectfully traversed.

The arguments made above with respect to the 35 U.S.C. § 103 Rejection of Claims 74, 82, and 98 apply here as well. Claims 77, 78, 80, and 106 depend from Claim 74. Claims 85, 86, 88, and 107 depend from Claim 82. Claims 101-102, 104, and 109 depend from Claim 98. The 35 U.S.C. § 103 rejection of independent Claims 74, 82, and 98 based on Chen et al. in view of Williams and further in view of Schrobenhauzer et al. is unsupported by the cited art of record because Chen et al. in view of Williams and further in view of Schrobenhauzer et al. does not teach or suggest all the claim limitations. Therefore, the 35 U.S.C. § 103 rejection of dependent claims 77, 78, 80, 85, 86, 88, 93, 94, 96, 101, 102, 104 and 106-109 based on Chen et al. in view of Williams, further in view of Schrobenhauzer et al., and further in view of Case et al. is also

[9] Network Working Group Request for Comments (RFC) 1157.

unsupported by the cited art of record. Thus, a *prima facie* case has not been established and the rejection must be withdrawn.

Claim 77

Claim 77 as presently amended recites:

> The method of claim 74, wherein the pattern further comprises a periodicity of the network management data requests contained in the pattern.

The Examiner states:

> ... Case teaches where the pattern further comprises a periodicity of the network management data requests contained in the pattern (Case, page 6, lines 7-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chen, Williams and Schrobenhauzer in view of Case in order to use a specific type of pattern. One would be motivated to do so in order to minimize the amount of traffic generated by the network management function.[11]

The Applicant respectfully disagrees. In support of the Examiner's statement, the Examiner refers to the following portion of Case:

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Case, Fedor, Schoffstall, & Davin                          [Page 6]

RFC 1157                        SNMP                       May 1990


   Also for the sake of simplicity, the SNMP uses only a subset of the
   basic encoding rules of ASN.1 [10].  Namely, all encodings use the
   definite-length form.  Further, whenever permissible, non-constructor
   encodings are used rather than constructor encodings.  This
   restriction applies to all aspects of ASN.1 encoding, both for the
   top-level protocol data units and the data objects they contain.

3.2.3.  Operations Supported on Management Information

   The SNMP models all management agent functions as alterations or
   inspections of variables.  Thus, a protocol entity on a logically
   remote host (possibly the network element itself) interacts with the
   management agent resident on the network element in order to retrieve
   (get) or alter (set) variables.  This strategy has at least two
   positive consequences:
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[10] Office Action at ¶ 12.
[11] Office Action, ¶ 13.

The cited portion of Case speaks generally about network elements retrieving or altering variables, but says nothing about a pattern comprising a periodicity of network management data requests contained in the pattern as required by Claim 77. For this additional reason, the 35 U.S.C. § 103 rejection of Claim 77 based on Chen et al. in view of Williams, further in view of Schrobenhauzer et al., and further in view of Case et al. is unsupported by the cited art of record and the rejection must be withdrawn.

Claim 78

Claim 78 as presently amended recites:

> The method of claim 106, wherein the initiating includes initiating periodic data collections at a rate matching a periodicity of the network management data requests contained in the pattern.

The Examiner states:

> ... Case teaches where the initiating includes initiating periodic data collections at a rate matching a periodicity of the network management data requests containing the pattern (Case, page 6, lines 7-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chen, Williams and Schrobenhauzer in view of Case in order to use a specific type of pattern. One would be motivated to do so in order to minimize the amount of traffic generated by the network management function.[12]

The Applicant respectfully disagrees. The argument made above with respect to Claim 77 applies here as well. The cited portion of Case says nothing about what goes in a pattern, or periodicity of requests.

Additionally, Claim 78 depends from Claim 106, yet the rejection of Claim 78 makes no mention of the limitations found in Claim 106. For these additional reasons, the 35 U.S.C. § 103 rejection of Claim 78 based on Chen et al. in view of Williams, further in view of

[12] Office Action, ¶ 14.

Schrobenhauzer et al., and further in view of Case et al. is unsupported by the cited art of record and the rejection must be withdrawn.

Claim 80

Claim 80 as presently amended recites:

> The method of claim 74, wherein the determining if a first network management request matches a pattern of request based on at least one of:
> a community string;
> a network management system IP address; or
> a network management system port number.

The Examiner states:

> ... Case teaches where the determining if a first network management request matches a pattern of request based on at least one of, a community string; a network management system IP address; or a network management system port number (Case, page 13, last paragraph - page 14, first paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chen, Williams and Schrobenhauzer in view of Case in order to use a specific type of pattern. One would be motivated to do so in order to minimize the amount of traffic generated by the network management function.[13]

The Applicant respectfully disagrees. Claim 80 specifies that determining if a first network management request matches a pattern of request based on at least one of three items: (1) a community string, (2) a network management system IP address, and (3) a network management system port number. In support of the Examiner's statement, the Examiner refers to the following portion of Case:

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3.2.6.3.5.  tcpConnTable Object Type Names

   The name of a TCP connection, x, is the OBJECT IDENTIFIER of the form
   a.b.c.d.e.f.g.h.i.j such that a.b.c.d is the value (in the familiar
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[13] Office Action, ¶ 15.

"dot" notation) of that instance of the tcpConnLocalAddress object type associated with x and such that f.g.h.i is the value (in the familiar "dot" notation) of that instance of the tcpConnRemoteAddress object type associated with x and such that e is the value of that instance of the tcpConnLocalPort object type associated with x and such that j is the value of that instance of the tcpConnRemotePort object type associated with x.

The portion of Case cited above says nothing about determining if a first network management request matches a pattern of request, let alone that such a determination is based on either a community string, a network management system IP address, or a network management system port number. For this additional reason, the 35 U.S.C. § 103 rejection of Claim 80 based on Chen et al. in view of Williams, further in view of Schrobenhauzer et al., and further in view of Case et al. is unsupported by the cited art of record and the rejection must be withdrawn.

Claim 106

Claim 106 as presently amended recites:

> The method of claim 74, further comprising:
> if the first network management data request matches a pattern defined in the memory, but data responsive to the first network management data request is not contained in the cache, initiating periodic data collections for data responsive to network management data requests in the pattern.

The Examiner states:

> ... Case teaches initiating periodic data collections for data responsive to network management data requests in the pattern (Case, page 6, lines 7-11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Chen, Williams and Schrobenhauzer in view of Case in order to use a specific type of pattern. One would be motivated to do so in order to minimize the amount of traffic generated by the network management function.[14]

[14] Office Action, ¶ 16.

The Applicant respectfully disagrees. The arguments made above with respect to Claim 77 apply here as well.

Claims 90-91, 93-96, and 108

Claims 90-91, 93-96, and 108 are means-plus-function claims. In support of the 35 U.S.C. § 103 rejections of Claims 90-91, 93-96, and 108, the Examiner refers to the same portions of the cited references used in the Examiner's rejection of method claims, *In re Beauregard* claims, and non-means-plus-function apparatus claims. The Examiner is referred to the U.S. Patent and Trademark Office document entitled "Examination Guidelines For Claims Reciting A "Means or Step Plus Function" Limitation In Accordance With 35 U.S.C § 112, 6th Paragraph" ("Guidelines"), a copy of which is submitted herewith for the Examiner's convenience. The Guidelines state:

> ... Per our holding, the 'broadest reasonable interpretation' that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, *the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a Patentability determination* ...
> ... [The] examiner shall interpret a § 112, 6th paragraph "means or step plus function" limitation in a claim as limited to the corresponding structure, materials or acts described in the specification and equivalents thereof in acts accordance with the following guidelines.[15]

The Guidelines state further:

> ... if a prior art reference teaches identity of function to that specified in a claim, then under Donaldson an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function.[16]

[15] "Examination Guidelines For Claims Reciting A "Means or Step Plus Function" Limitation In Accordance With 35 U.S.C § 112, 6th Paragraph," U.S. Patent and Trademark Office, http://www.uspto.gov/web/offices/pac/dapp/pdf/exmgu.pdf, p. 1. (emphasis added)
[16] Guidelines at p. 3. (emphasis in original)

As Claims 90-91, 93-96, and 108 of the present application are means-plus-function claims they cannot be said to be drawn to identical subject matter as the method claims, the *In re Beauregard* claims, and the non-means-plus-function system claims. Furthermore, the Examiner has not shown for each means-plus-function claim, that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function. Therefore, the Examiner has not established a *prima facie* case. Accordingly, the 35 U.S.C. § 103 rejections of Claims 90-91, 93-96, and 108 must be withdrawn.

In view of the foregoing, it is respectfully asserted that the claims are now in condition for allowance.

Conclusion

It is believed that this Amendment places the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited.

If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

The Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,

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Dated: October 3, 2007

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Examination Guidelines For Claims Reciting A "Means or Step Plus Function" Limitation In Accordance With 35 U.S.C § 112, 6th Paragraph

The purpose of this memo is to set forth guidelines for the examination of § 112, 6th paragraph "means or step plus f unction" limi tations in a claim. The court of Appeals for the Federal Circuit, in its en banc decision In re Donaldson 29 USPQ 2d 1845 (Fed. Cir. 1994), decided that a "means-or-step-plus-function" limitation should be interpreted in a manner different than patent examining practice has dictated for at least the last forty-two years. The Donaldson decision affects only the manner in which the scope of a "means or step plus function" limitation in accordance with § 112, 6th para graph, is interpreted during examination. Donaldson does not di rectly affect the manner in which any other section of the patent statutes is interpreted or applied.

When making a determination of patentability under 35 U.S.C. § § 102 or 103, past practice was to interpret a "means or step plus function" limitation by giving it the "broadest reasonable interpre tation." Under the PTO's long-standing practice this meant inter preting such a limitation as reading on any prior art means or step which performed the function specified in the claim without regard for whether the prior art means or step was equivalent to the corre sponding structure, material or acts described in the specification. However, in Donaldson the Federal Circuit stated that:

Per our holding, the "broadest reasonable interpretation" that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a Patentability determination. [1]

Thus, effective immediately, examiner shall interpret a § 112, 6th paragraph "means or step plus function" limitation in a claim as lim ited to the corresponding structure, materials or acts described in the specification and equivalents thereof in acts accordance with the following guidelines.

I. Identifying a § 112, 6th paragraph limitation

[1] In re Donaldson , 29 USPQ2d 1845, 1850 (Fed. Cir. 1994).

Although there is no magic language that must appear in a claim in order for it to fall within the scope of § 112, 6th paragraph, it must be clear that the element in the claim is set forth, at least in part, by the function it performs as opposed to the specific struc ture, material, or acts that perform the function. Limitations that fall within the scope of § 112, 6th paragraph include:

(1) a jet driving device so constructed and located on the rotor as to drive the rotor . . . [2] ["means" unnecessary]

(2) "printing means" and "means for printing" would have the same connotations [3]

(3) force generating means adapted to provi de . . . [4]

(4) call cost register means, including a digital display for providing a substantially instantaneous display for . . . [5]

(5) reducing the coefficient of friction of the resulting film [6] [step plus function; "step" unnecessary], and

(6) raising the Ph of the resultant pulp to about 5.0 to precipitate . . . [7]

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[2]The term "device" coupled with a function is a proper definition of structure in accordance with the last paragraph of § 112. The addition of the words "jet driving" to the term " device" merely renders the latter more definite and specific. Ex parte Stanley, 121 USPQ 621 (Bd. APP. 1958).

[3]Ex parte Klum, 159 USPQ 694 (Bd. App. 1967). However, the terms "plate" and "wing", as modifiers of the structureless term "means," specify no function to be performed, and do not fall under the last paragraph of § 112.

[4]De Graffenreid v. U.S., 20 Ct. Cl. 458, 16 USPQ2d 1321 (Ct. Cl. 1990)

[5]Intellicall Inc. v. Phonometrics Inc., 952 F.2d 1384, 21 USPQ2d 1383 (Fed. Cir. 1992).

[6]In re Roberts, 470 F.2d 1399, 176 USPQ 313 (CCPA 1973).

[7]Ex parte Zimmerley, 153 USPQ 367 (Bd. App. 1966)

In the event that it is unclear whether the claim limitation falls within the scope of §112, 6th paragraph, a rejection under §112, 2d paragraph may be appropriate.

Donaldson does not affect the holding of In re Hyatt, 708 F.2d 712, 218 USPQ 195(Fed. Cir. 1983) to the effect that a single means claim does not comply with the enablement requirement of § 112, first paragraph. As Donaldson applies only to an interpretation of a limi tation drafted to correspond to § 112, 6th paragraph, which by its terms is limited to "an element in a claim to a combination," it does not affect a limitation in a claim is not directed to a combination.

II. **Examining Procedure**

A. Scope of the Search and Identification of the Prior Art

As noted above, in Donaldson the Federal Circuit recognized that it is important to retain the principle that claim language should be given its broadest reasonable interpretation. This principle is im portant because it helps insure that the statutory presumption of validity attributed to each claim of an issued patent is warranted by the search and examination conducted by the examiner. It is also important from the standpoint that the scope of protection afforded by patents issued prior to Donaldson are not unnecessarily limited by the latest interpretation of this statutory provision. Finally, it is important from the standpoint of avoiding the necessity for a patent specification to become a catalogue of existing technology. [8]

The Donaldson decision thus does not substantially alter examin ing practice and procedure relative to the scope of the search. Both before and after Donaldson, the application of a prior art reference to a means or step plus function limitation requires that the prior art element perform the identical function specified in the claim. However, if a prior art reference teaches identity of function to that specified in a claim, then under Donaldson an examiner carries the initial burden of proof for showing that the prior art structure or step is the same as or equivalent to the structure, material, or acts described in the specification which has been identified as corresponding to the claimed means or step plus function.

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[8]A patent specification need not teach, and preferably omits, what is well known in the art. Hybritech Inc. v. Monoclonal Antibod ies. Inc., 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986).

The "means or step plus fu nction" limitation should be interpreted in a manner consistent with the specification disclosure. If the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having the meaning. If no definition is provided, some judgment must be exercised in determining the scope of the limita tion.

B. Making a prima facie case of equivalence

If the examiner finds that a prior art element performs the function specified in the claim, and is not excluded by any explicit definition provided in the specification for an equivalent, the exam iner should infer from that finding that the prior art element is an equivalent, and should then conclude that the claimed limitation is anticipated by the prior art element. The burden then shifts to ap plicant[9] to show that the element shown in the prior art is not an equivalent of the structure, mate rial or acts disclosed in the application. In re Mulder, 716 F.2d 1542, 219 USPQ 189 (Fed. Cir. 1983). [10] The factors to be

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[9]No further analysis of equivalents is required of the examiner until applicant disagrees with the examiner's conclusion, and provides reasons why the prior art element should not be considered an equivalent.

[10]See also, In re Walter, 618 F.2d at 768, 205 USPQ at 407-08, (a case treating § 112, 6th paragraph, in the context of a determination of statutory subject matter and noting "If the functionally-defined disclosed means and their equivalents are so broad that they encom pass any and every means for performing the recited functions . . . the burden must be placed on the applicant to demonstrate that the claims are truly drawn to specific apparatus distinct from other apparatus capable of performing the identical functions"); In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 229 (C.C.P.A. 1971) (a case in which the CCPA treated as improper a rejection under § 112, 2d paragraph, of functional language, but noted that "where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it pos sesses the authority to require the applicant to prove that the sub ject matter shown to be in the prior art does not possess the charac teristics relied on"); and In re Fitzgerald 619 F.2d 67, 205 USPQ 594 (CCPA 1980) (a case indicating that the burden of proof can be shifted to the applicant to show that the subject matter of the prior art does not possess the characteristic relied on whether the rejec tion is based on inherency under § 102 or obviousness under § 103).

considered when determining whether the applicant has successfully met the bur den of proving that the prior art element is not equivalent to the structure, material or acts described in the applicant's specifica tion are discussed below.

However, even where the applicant has met that burden of proof and has shown that the prior art element is not equivalent to the structure, material or acts described in the applicant's specifica tion, the examiner must still make a §103 analys is to determine if the claimed means or step plus function is obvious from the prior art to one of ordinary skill in the art. Thus, while a finding of non equivalence prevents a prior art element from anticipating a means or step plus function limitation in a claim, it does not prevent the prior art element from rendering the claim limitation obvious to one of ordinary skill in the art.

Because the exact scope of an "equivalent" may be uncertain, it would be appropriate to apply a §102/§103 rejection where the balance of the claim limitations are anticipated by the prior art relied on. [11] In addition, although it is normally the best practice to rely on only the best prior art references in rejecting a claim, alternative grounds of rejection may be appropriate where the prior art shows elements that are different from each other, and different from the specific structure, material or acts described in the specification, yet perform the function specified in the claim.

C. Determining whether an applicant has met the burden of providing non-equivalence after a *prima facie* case is made

If the applicant disagrees with the inference of equivalence drawn from a prior art reference, the applicant may provide reasons why the applicant believes the prior art element should not be con sidered an equivalent to the specific structure, material or acts disclosed in the specification. Such reasons may include, but are not limited to: 1) teachings in the specification that particular prior art is not equivalent, 2) teaching in the prior art reference itself that may tend to show non-equivalence, or 3) Rule 132 affidavit evidence of facts tending to show non-equivalence.

When the applicant relies on teachings in applicant's own speci fication, the examiner must make sure that the applicant is inter preting the "means or step plus function" limitation in the

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[11] A similar approach is authorized in the case of product-by--process claim because the exact identity of the claimed product or the prior art product cannot be determined by the examiner. In re Brown, 450 F.2d 531, 173 USPQ 685 (CCPA 1972).

claim in a manner which is consistent with the disclosure in the specifica tion. If the specification defines what is meant by "equivalents" to the disclosed embodiments for the purpose of the claimed means or step plus function, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgment must be exercised in determining the scope of "equivalents." Gener ally, an "equivalent" is interpreted as embracing more than the spe cific elements described in the specification for performing the specified function, [12] but less than any element that performs the function specified in the claim.

The scope of equivalents embrace d by a claim limitation is dependent on the interpretation of an "equivalent". The interpretation will vary depending on how the element is described in the supporting specification. The claim may or may not be limited to particular structure, material or acts (e.g. steps) as opposed to any and all structure, material or acts performing the claimed function, de pending on how the specification treats that question.

If the disclosure is so broad as to encompass any and all struc ture, material or acts for performing the claimed function, the claims must be read accordingly when determining patentability. When this happens the limitation otherwise provided by "equivalents" ceases to be a limitation on the scope of the claim in that an equivalent would be any structure, material or act other than the ones described in the specification that perform the claimed function. For example, this situation will often be found in cases where (1) the claimed invention is a combination of elements, one or more of which are selected from elements that are old per se, or (2) appara tus claims are treated as indistinguishable from method claims. [13]

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[12] To interpret "means plus function" limitations as limited to a particular means set forth in the specification would nullify the provisions of § 112 requiring that the limitation shall be construed to cover the structure described in the specification and equivalents thereof. D.M.I., Inc. v. Deere & Co. , 755 F.2d 1570, 1574, 225 USPQ 236, 238 (Fed. Cir. 1985).

[13] See, for example, In re Meyer, 688 F.2d 789, 215 USPQ 193 (1982); In re Abele , 618 F.2d at 768, 205 USPQ at 401-08; In re Walter, 618 F.2d 758, 767, 205 USPQ 397, 406-07 (C.C.P.A. 1980); In re Maucorps , 609 F.2d 481, 203 USPQ 812 (C.C.P.A. 1979); In re Johnson , 589 F.2d, 1070, 200 USPQ 199 (C.C.P.A. 1978); and In re Freeman, 573 F.2d at 1246, 197 USPQ at 471.

On the other end of the spectrum, the "equivalents" limitation as applied to a claim may also operate to constrict the claim scope to the point of covering virtually only the disclosed embodiments. This can happen in circumstances where the specification describes the invention only in the context of a specific structure, material or act that is used to perform the function specified in the claim.

When deciding whether an applicant has met the burden of proof with respect to showing non-equivalence of a prior art element that performs the claimed function, the following factors may be consid ered. First, unless an element performs the identical function specified in the claim, it cannot be a equivalent for the purpose of §112, 6th paragraph. [14]

Second, while there is no litmus test for an "equivalent" that can be applied with absolute certainty and predictability, there are several indicia that are sufficient to support a conclusion that one element is or is not an "equivalent" of a different element in the context of § 112, 6th paragraph. Among the indicia that will support a conclusion that one element is or is not an equivalent of another are:

1) Whether the prior art element performs the function speci fied in the claim in substantially the same results as the corre sponding element disclosed in the specification. [15]

2) Whether a person of ordinary skill in the art would have recognized the interchangeability of the element shown in the prior art for the corresponding element disclosed in the specification. [16]

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[14] Pennwalt Corp. v. Durand-Wayland Inc . 833 F.2d 931, 4 USPQ2d 1737 (Fed. Cir. 1987), cert. denied , 484 U.S. 961 (1988).

[15] Lockheed Aircraft Corporation v. United States , 193 USPQ 449, 461 (Ct. Cl. 1977). Graver Tank concepts of equivalents are relevant to any "equivalents" determination. Polumbo v. Don-Joy Co., 762 F.2d 696, 975, n. 4, 226 USPQ 5, 8-9, n. 4 (Fed. Cir. 1985).

[16] Lockheed Aircraft Corporation v. United States , 193 USPQ 449, 461 (Ct. Cl. 1977). Data Line Corp. v. Micro Technologies. Inc ., 813 F.2d 1196, 1 USPQ2d 2052 (Fed. Cir. 1987).

3) Whether the prior art element is a structural equivalent of the corresponding element disclosed in the specification being examined.[17] That is, the prior art element performs the function specified in the claim in substantially the same manner as the function is performed by the corresponding element described in the specification.

4) Whether the structure, material or acts disclosed in the specification represents an insubstantial change which adds nothing of significance to the prior art element.[18]

These examples are not intended to be an exhaustive list of the indicia that would support a finding that one element is or is not an equivalent of another element for the purposes of § 112, 6th paragraph. A finding according to any of the above examples would represent a sufficient, but not the only possible, basis to support a conclusion that an element is or is not an equivalent. There could be other indicia that also would support the conclusion.

In determining whether arguments or Rule 132 evidence presented by an applicant are persuasive that the element shown in the prior art is not an equivalent, the examiner should consider and weigh as many of the above-indicated or other indicia as are presented by applicant, and should determine whether, on balance, the applicant has met the burden of proof to show non-equivalence. However, under no circumstance should an examiner accept as persuasive a bare statement or opinion that the element shown in the prior art is not an equivalent embraced by the claim limitation. Moreover, if an applicant argues that the "means" or "step" plus function language in a claim is limited to certain specific structural or additional functional characteristics (as opposed to "equivalents" thereof) where the specification does not describe the invention as being only those specific characteristics, the claim should not be allowed until the claim is amended to recite those specific structural or additional functional characteristics.[19]

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[17] In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

[18] Valmont Industries Inc. v. Reinke Manufacturing Co. Inc., 983 F.2d 1039, 25 USPQ2d 1451 (Fed. Cir. 1993).

[19] Otherwise, a claim could be allowed having broad functional language which in reality is limited to only the specific structure or steps disclosed in the specification. This would be

Finally, as in the past, applicant has the opportunity during proceedings before the Office to amend the claims so that the claimed invention meets all the statutory criteria for patentability. An applicant may choose to amend the claim by further limiting the func tion so that there is no longer identity of function with that taught by the prior art element, or the applicant may choose to replace the claimed means plus function limitation with specific structure material or acts that are not described in the prior art.

D. Related issues under Section 112 first or secon d paragraphs

The Donaldson decision may create some uncertainty as to what applicant regards as the invention. If this issue arises, it should be addressed in a rejection under §112, 2d paragraph. While § 112, 6th paragraph permits a particular form of claim limitation, it can not be read as creating an exception either to the description, enablement or best mode requirements of the 1st paragraph or the definiteness requirement of the 2d paragraph of § 112. In re Knowlton, 481 F.2d 1357, 178 USPQ 486 (CCPA 1973). If a "means or step plus function" limitation recited in a claim is not supported by corresponding structure, material or-acts in the specification disclosure, the following rejections should be consid ered: (1) under § 112, 1st paragraph, as not being supported by an enabling disclosure because the person skilled in the art would not know how to make and use the invention without a description of ele ments to perform the function; [20] (2) under § 112, 2d paragraph, as being indefinite because the element or step is not defined in the specification by corresponding structure, material or acts; (3) under § § 102 or 103 where the prior art anticipates or renders obvious the claimed subject matter including the means or step that performs the function specified in the claim. (Theory: since there is no corresponding structure, etc. in the specification to limit the means or step plus function limitation, an equivalent is any element that performs the specified function).

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contrary to public policy of granting patents which provide adequate notice to the public as to a claim's true scope.

[20]The description of an apparatus with block diagrams describing the function, but not the structure, of the apparatus is not fatal under the enablement requirement of § 112, 1st paragraph, as long as the structure is conventional and can be determined without an undue amount of experimentation. In re Ghiron , 442 F. 2d 985, 991,169 USPQ 723, 727 (CCPA 1971)

III. Avoid confusion with the doctrine of equivalents

An "equivalent" for the purposes of § 112, 6th paragraph, should not be confused with the doctrine of equivalents. The doctrine of equivalents, most often associated with Graver Tank & Mfg. Co. v. Linde Air Products 339 U.S. 605, 85 USPQ 328 (1950), is sometimes applied to do equity among the parties before the court in an in fringement action involving an issued patent. The doctrine typically involves a three-part inquiry - whether an accused device performs substantially the same function, in substantially the same way, to obtain substantially the same result as the claimed invention.

Section § 112, 6th paragraph limits the scope of the broad language of "means or step plus function" limitations, in a claim to a combination, to the structures, materials and acts described in the specification and equivalents thereof. The doctrine of equivalents equitable expands exclusive patent rights beyond the literal scope of a claim. [21] Accordingly, decisions involving the doctrine of equiva lents should not unduly influence a determination under § 112, 6th paragraph during ex parte examination.

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[21] Valmont Industries Inc., Reinke Manufacturing Co., Ind., 983 F.2d 1039, 1043, 1044, 25 USPQ2d 1451, 1455 (Fed. Cir. 1993).